

12.3.B8 v2
11-27-94

AIR QUALITY INVENTORY

TITLE V REQUIREMENTS

FOR CH2MHILL

PREPARED BY:
SONNY LEE BIVINS
MAINTENANCE GENERAL FOREMAN
LONGVIEW FIBRE CO.
SEATTLE WA.

COPIES TO:
STEVE DUVALL
RACHAEL CONTORER
ULF WALLEND AHL
DAVE MENDENHALL

NOVEMBER 27,1994



LFC000970

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 SIXTH AVENUE
SEATTLE, WA 98101

TARGET SHEET

The following document was not imaged.

This is due to the Original being:

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<u> </u>	CD Rom
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<u> </u>	Video Tape
<u> </u>	DVD
	Other:
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**A copy of the document may be requested from the Superfund Records Center.

Document Information

Document ID #:	<u>1256806</u>
File #:	<u>12.3.138v2</u>
Site Name:	<u>Lower Duwamish Waterway (LDWSF)</u>

LFC000971

Rachael Contorer
Air Quality Engineer
CH2M HILL
PO Box 91500
Bellevue, WA. 98009-2050

11-26-94

Ms. Contorer,

After our meeting on 11-16-94 it was determined that CH2M HILL needed certain information to complete the title V air quality inventory

Air Permits- We have one permit that is renewable each year . It covers the boiler , shredder , and starch silo . It lists the bag house on the starch silo and the cyclone (for trim recovery) as the Air Contaminant Control Equipment devices . A copy of this is included marked page 1A .

The plant runs an average of 620 hours a month . The maximum corrugator output would be near 70MM sq. ft. of corrugated . This is an estimate as there is a number of factors that can change this in either direction .

Boiler- 300 h.p.-----250lb.----10,500lb./hr.----Babcock and Wilcox . It burns two types of fuel . Natural Gas or diesel . We use 31,504 therms of heat a month for the manufacturing process . We also use 199 therms a month for plant heat . Copies of the invoices from the gas company are marked 1B and 2B . Our standby fuel is Diesel . We store 5000 gal. on site . As we discussed this is seldom used and only in an emergency . If the plant is running the boiler is on . We run Reznor space heaters . 400,000 Btu output . They are on six months out of the year . There are five of these heaters and three 50,500 Btu gas spot heaters that run at the same time . Spec sheets are marked 3B and 4B .

There are eleven forklifts . They have an average cu.in. displacement of 180 cu.in. We run nine of these full time and the others are on standby . We use 20,563lbs. of propane a month . Copy of the bill is marked 5B.

The chemicals used in our process are listed :

Starch---184,000 lbs. a month -AA
Ink-----15,600lbs. a month -BB
Glue-----10,000lbs. a month -CC
Sodium Hydroxide---8,300lbs. a month -DD
Non-skid-----4,980lbs. a month -EE
Resin-----1,000lbs. a month -FF
Fuller type coating---400lbs. a month -GG

Each of these items have a MSDS copy provided . The ink suppliers each have two .

Air Pollution Control Equipment

We have a model 42S scrap cyclone manufactured by Blower Application Company . The cyclone is rated at 55,000 cfm . I don't have a spec sheet on the cyclone only the original mechanical drawings . If you would like these I can supply you with a copy . It was installed in 1972 . We feed four fans into the cyclone . The flexo fan , which runs continuously , is a 75hp #50 fan . It is rated at 10,000 cfm . The trim pit fan , also running continuously , is a 60hp #50 fan rated at 8,000 cfm . The corrugator trim fan is a 40hp #m17 fan rated at 7,000 cfm . It also runs continuously . The shredder fan runs only while the shredder is being used . Approximately 12hrs. each day . It is a 25hp #40 fan rated at 5,000 cfm .

The bag house on the starch silo is used during the filling of the silo only . It is a model 58-AJ-16 . rated at 600cfm . It runs a total of 3hrs a week . The spec sheet is marked C2 .

The bag house on the mixing system is Sprout-Bauer design . Rated at 500acfm . Spec sheet is marked C1 . It runs approximately 5hrs a day . This is vented inside the building and only external makeup air is used .

Included is a full plant drawing showing the roof layout as well . I have marked all of the roof vents as what they are .

We run a moving average of 5,968,000 lbs of corrugated a month . Of this amount we have 9.6% waste or combined trim from customers and fall down on the manufacturing process . This is 572,928 lbs of material . All of which travels through the cyclone system . The volume that can be produced in the flexos is restricted by the maximum output of the corrugator .

We run an average of 49,423,000 sq.ft. a month with a combined basis weight of 119 lbs. per thousand square feet produced .

I think I have supplied you with all of the information required . If there are any other items needed or more information , please contact me at 762-7170 .

I would like a copy of any report or pertinent information . I will send a copy of this information to each of the people listed on the cover sheet .

Thank You ,
Sonny Lee Bivins
Maintenance General Foreman
Longview Fibre Co.
Seattle , WA.

1A-

Puget Sound Air Pollution Control Agency

110 Union Street, Suite 500, Seattle, WA 98101-2038: (206) 689-4014

INVOICE

1A

Bill to: LONGVIEW FIBRE CO. PO BOX 24867 SEATTLE, WA 98124-0867 Attn: Accounting Department	Date: November 4, 1994 Invoice No: 20155 Account No: 401595001 Terms: Net 30 Days
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1995 REGISTRATION FEE SUMMARY -- 15019 5901 E MARGINAL WY S, SEATTLE

The annual registration fee is required by Washington State law and Puget Sound Air Pollution Control Agency's Regulation I. This statement is based on Agency files showing equipment to be used during 1995 and either permitted emissions or actual emissions during calendar year 1993. Please pay the amount indicated by December 5, 1994, enclosing the yellow copy of the invoice with your payment. Your 1995 Registration Certificate is enclosed.

Description	No. of Items	Charge per Item	Total Charge
Fixed Charge per Facility:	1	\$ 85	\$ 85.00
Air Contaminant-Generating Equipment:			
Boiler	1	\$ 35	\$ 35.00
Paper Shredder	1	\$ 35	\$ 35.00
Storage Bin/Silo	1	\$ 35	\$ 35.00
Emission Fee*	3	\$ 21	\$ 63.00
Air Contaminant Control Equipment:			
Baghouse	1	\$ 80	\$ 80.00
Cyclone	1	\$ 80	\$ 80.00
TOTAL REGISTRATION FEE			\$ 413.00

N/A
 11.95
 10.35
 X
 Permit # 50300020p

* Emission Fee is calculated based on the total number of air contaminant generating equipment items.

50300020p 413.00

DUPLICATE COPY. PLEASE MAIL WITH YOUR PAYMENT.

1A

LONGVIEW FIBRE CO
PO BOX 24867
SEATTLE WA 98124

PLEASE PAY THIS AMOUNT

DATE: 09/21/94 \$ 13,990.89

PLEASE PAY BEFORE: 10/06/94

REMIT TO: WASHINGTON NATURAL GAS COMPANY
P.O. BOX 12520
SEATTLE WASHINGTON 98111-4520

Make checks payable to WNG Co.

Please bring entire document with you if payment is made in person.

1 89366961001012 001399089 00000000000000 00000000 001399089

SERVICE AT: 5901 E MARGINAL WY S

SERVICE AT: 5901 E MARGINAL WY S
LONGVIEW FIBRE CO
PO BOX 24867
SEATTLE WA 98124

Return this portion with your payment

RATE	GAS ACCOUNT NUMBER	MERCHANDISE ACCOUNT NUMBER
85	89366961 001	

DATE: 09/21/94

2B

CURRENT BILL 13,990.89
PREVIOUS BAL 13,041.07
PAYMENT 13,041.07CR
PLEASE PAY 13,990.89
CURRENT BILL PAST DUE 10/06/94

ID# 0500

RATE= 66085 CITY= 1011 SIC= 02653 CYCLE= 12 DEMAND THERMS= 53.0

METER		READING DATES		GAS USAGE BY METER		TURNUP	PRESSURE	TEMP
NBR		FROM	THRU	METER READINGS				
356702		08/12/94	09/13/94	PREV	CURR			
				017533	035022	17489	10.50	60
FPV=	1.001615	BTU FACTOR=		1.050	CCF=	30004	THERMS=	31504.2

** CONTINUED NEXT PAGE **

2B

LONGVIEW FIBRE CO
PO BOX 24867
SEATTLE WA 98124

DATE: 10/07/94 \$ 116.00

PLEASE PAY BEFORE 10/22/94

REMIT TO: WASHINGTON NATURAL GAS COMPANY

P.O. BOX 12520

SEATTLE, WASHINGTON 98111-4520

Make checks payable to WNG Co.

Please bring entire document with you if payment is made in person.

1 89366960001013 000011661 00000000000000 00000000 000011661

SERVICE AT: 5901 E MARGINAL WY S

Return this portion with your payment

SERVICE AT: 5901 E MARGINAL WY S

RATE GAS ACCOUNT NUMBER MERCHANDISE ACCOUNT NUMBER

LONGVIEW FIBRE CO
PO BOX 24867
SEATTLE WA 98124

31 89366960 001

DATE: 10/

1B

CURRENT BILL 116.61
PREVIOUS BAL 67.25
PAYMENT 67.25
PLEASE PAY 116.61
CURRENT BILL PAST DUE 10/22

ID# 1028

RATE= 04031 CITY= 1011 SIC= 02653 CYCLE= 03

METER		READING DATES		GAS USAGE BY METER		TURNUP	PRESSURE
NBR	FROM	THRU	PREV	CURR			
416433	09/07/94	10/05/94	007883	008025	142		5.10
FPV=	1.000769	BTU FACTOR=	1.045	CCF=	191	THERMS=	199.6

** CONTINUED NEXT PAGE **

4.7.94
105.94

1B



Ball In Con CUSTOMER# 35603 01 01
Glass Packaging Corp.

DEBIT MEMO Invoice

PLEASE REMIT TO
FILE NO. 31847
LOS ANGELES

NO. D019721-96

CA 90074 PAGE 13

TERMS DUE UPON RECEIPT OF INVOICE

DATE 10/05/94 ST WA PL 96 DIV 22 TYPE R
REQUEST # PLT9694235 000

SHIP TO:

SOLD TO

LONGVIEW FIBRE COMPANY
PO BOX 24867

LONGVIEW FIBRE COMPANY
PO BOX 24867

SEATTLE

WA 98124

SEATTLE

WA 98124

SHIP FROM
B/L#

VEHICLE

LOC

ORDER#

00 OF 00 - CUST ORD#
- FOB

PRODUCT DESCRIPTION
DEBIT MEMOS

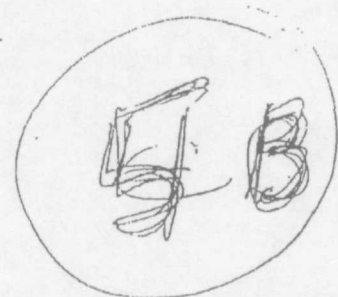
CASES QUANTITY

UNIT PRICE AMOUNT
685.44

TO BILL PROPANE USAGE FOR SEPTEMBER, 1994.
306 CANS @ 8 GALLONS X \$.28/GALLON
COPY OF USAGE LIST IS ATTACHED.

PAY THIS AMOUNT 685.44

HA
9.1.94
9.30.94

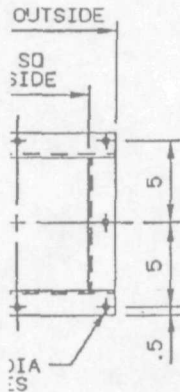


SEE REVERSE SIDE FOR ADDITIONAL TERMS AND CONDITIONS

C1

NOTES:

1. BAGS AND CAGES TO BE SHIPPED LOOSE FOR FIELD INSTALLATION.
2. SHOP TO PLUG ALL OPENINGS BEFORE SHIPPING.
3. PAINT EXTERIOR ONLY LIBERTY BLUE (000X56500256)
4. PC'S 32, 33, AND 34 (NOT SHOWN) TO BE SHIPPED LOOSE.



SCHARGE FLANGE
25" = 1' 0"

CUSTOMER INFORMATION

PRODUCT: CORN STARCH	
AIR VOLUME 500 ACFM	TEMPERATURE: AMBIENT
FILTER AREA: 114 SQ.FT.	LOCATION: INDOORS
AIR TO CLOTH RATIO 4.2 TO 1	DESIGN PRESSURE: 17" H ₂ O
COMPRESSED AIR REQ'D 5.8 SCFM @ 85 - 100 PSIG CLEAN DRY & OIL FREE	
WEIGHT: 900 LBS	COLLECTOR DEAD LOAD ONLY

CUSTOMER: LONGVIEW FIBRE
 CUSTOMER ORDER NO: _____
 SERIAL NUMBER: 1993-00095
 SPROUT-BAUER ORDER NO: 142761-5600

702.01C
 MFG. SPEC.

ROUGH EST. WEIGHT		LBS.
FINISH EST. WEIGHT		LBS.
TOLERANCES - UNLESS OTHERWISE NOTED		
MACHINING		
FABRICATION		
CAST/FORGE		
MACHINED FILLET RADII		
MAX MACHINED SURFACE ROUGHNESS		
125 / MICROINCHES (AA)		



THIS DRAWING RELATES TO PROPRIETARY SUBJECT MATTER. ANY PARTY ASSUMING CUSTODY DOES SO WITH THE EXPRESS UNDERSTANDING AND AGREEMENT THAT NEITHER RECEIPT NOR POSSESSION THEREOF CONFERS OR TRANSFERS ANY RIGHT TO USE, REPRODUCE OR DISCLOSE ITS CONTENTS, OR ANY PART THEREOF, IN ANY MANNER AND FOR ANY PURPOSE WHATSOEVER.

ANDRITZ SPROUT-BAUER, INC.
 MURRAY, PA.

ASSY & INSTALL, FILTER BIN-VENT
 MODEL 16-BV-58 ARRGT III
 SPECIAL PAINT (000X56500256)

BY	NAME	DATE	SCALE	ORDER NO
DR.	FMD	020293	1-1/4"=1'	142761
CK.			SHEET : OF 1	
ENGR.	DCF	030393	DRAWING NUMBER	
MFG.	RCS	030393	D6065-527	

CADAM DRAWING
 DO NOT REVISE MANUALLY

Starch ~~to~~ baghouse
 on starch mixing tank
 runs

C2

ADHESIVE MIXING EQUIPMENT Inc.

Area Code 717
653-8054

249B Shellyland Rd., R. D. 2, Rapho Industrial Park, Manheim, PA. 17545

SILO FILTER SPECIFICATIONS

1. MANUFACTURE: Shick - Tube Veyor
4346 Clary Blvd.
Kansas City, MO 64130
2. MODEL # 58-AJ-16 STYLE "B"
3. SQ. FT. OF CLOTH 116
4. TYPE BAG - 16 Oz. Polyester Felt Bag
5. TYPE CLEANING - Pulse Jet
6. AIR TO CLOTH - 6:1 to 7:1
7. VOLUME OF AIR - 600 to 700 CFM at 70°F
8. PERMEABILITY OF BAG - 25 to 35 CFM/sq. ft. of cloth
at 1/2" WG.
9. COMPRESSED AIR REQUIRED - 6 - 7 CFM @ 90 PSI
10. BAG SIZE - 4.5" dia. x 58" long
11. EFFICIENCY - 99.9% .02 Grams/ACFM
12. PRESSURE DROP ACCROSS BAGS - 4.5" WG

NOTE: KEEP THIS DOCUMENT ON HAND AT ALL TIMES AS YOU MAY
BE ASKED TO FURNISH THIS INFORMATION TO THE EPA (Environ-
mental Protection Agency).

Baghouse for
Silo on

Starch system

Runs 10-12 hrs mth.

Eric Metzger
Colin Resnell

Account # C-3-7571

Machine Name Gas Heaters

Manufacturer Reznor

Date Installed Nov, 1972

Serial #

Specifications Model XA-400

① 400,000 BTU units

② Summer Fan Switches

③ Wall Thermostats

④ Motor For Fans - Century

1/6 HP, 1140 RPM, 115 Volt, 3.3 Amp

Frame # E48Y, Type CX, Part 7-134666-01

6 HEATERS

3B

INSTALLATION-OPERATING SPECIFICATIONS

at Specifications

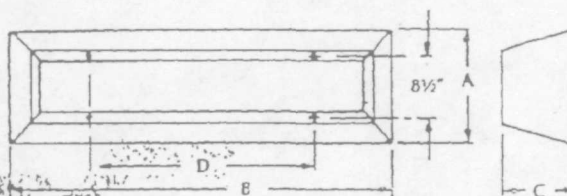
Heater Models		D 37	D 50	D 75	D 100
Input	Natural Gas	37,500 BTU/H	50,500 BTU/H	75,000 BTU/H	100,000 BTU/H
	Propane	37,500 BTU/H	45,000 BTU/H	67,500 BTU/H	90,000 BTU/H
Inlet Pipe Construction					

Gas Pressure To All Units	Natural Gas	7"-14" W.C.
	Propane	11"-13" W.C.
Manifold Gas Pressures All Units	Natural Gas	5" W.C.
	Propane	10" W.C.

Dimensional Data

Model	Wt. Lbs.	Burner Area Sq. In.	A	B	C	D
D 37	31	121	13½	21	8	11½
PD 37	32	121	15	22¼	13	11½
D 50	37	162	13½	26¼	8	16¼
PD 50	39	162	15	27¼	13	16¼
D 75	48	242	13½	36½	8	26
PD 75	50	242	15	38½	13	26
D 100	57	324	13½	46¼	8	38
PD 100	59	324	15	48¼	13	38

("P" Prefix = Standard Unit With Reflector Extension)



Installation

SUGGESTED MOUNTING HEIGHTS

	D 37	D 50	D 75	D 100
Horizontal	12'-15'	15'-18'	18'-23'	23'-29'
Angle 20°-30°	9'-12'	11'-15'	15'-20'	20'-25'
Between Units	Min. 9'	12'	18'	23'
	Max. 22'	26'	36'	42'

CLEARANCE TO COMBUSTIBLES — INCHES

	D 37	D 50	D 75	D 100
Top	40	32	32	32
Below	72	96	96	96
Sides	30	38	38	38
Back	30	38	38	38

WARRANTY

The Seller warrants the apparatus and/or equipment covered by this agreement to be of good material and workmanship, and to be free of defects if properly installed and operated. Any part or parts, which under normal use and service, upon examination shall satisfactorily disclose to us that they are defective, will, upon their return to us freight prepaid within one year from the date of sale, be replaced free F.O.B. Columbia. This warranty is expressly in lieu of all other warranties, expressed or implied, and no claim for consequential damages will be recognized. No person, firm or corporation is authorized to assume for us any other liability in connection with the sale of these goods.

THERMAL ENGINEERING CORPORATION

COLUMBIA INDUSTRIAL PARK
POST OFFICE BOX 868
COLUMBIA, SOUTH CAROLINA 29202
AREA CODE 803 783-0750

Distributed by:



All TEC Model D heaters have been tested and the design certified by the American Gas Association as complying with ANSI Z83.6 gas fired unvented infra-red radiant heaters.

GARY KEARNEY
COMMERCIAL REPRESENTATIVE
WASHINGTON NATURAL GAS CO.
622-6767

OCT- 1-93 FRI 15:39

P.02

AA

CORN PRODUCTS

Unit of CPC International, Inc.
P.O. Box 345, Argo IL, 60501
Information/Emergency Phone: (708) 563-6774
FAX (708) 653 6842

MATERIAL SAFETY DATA SHEET

Complies with 29CFR1910.1200
OSHA's Hazard Communication Standard
Prepared on : 06/12/90
By: K. E. Horn

PRODUCT: CORN PRODUCTSTM 3005, INDUSTRIAL STARCH
CAS No. 9005-25-8

HAZARDOUS INGREDIENTS

Hazardous Component	X	OSHA PEL	ACGIH TLV	Other limits
Corn Starch	100	total= 15mg/cu.m.	10 mg/cu.m.	
Respirable fraction= 5mg/cu.m.				

PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and odor: White powder Cereel odor

Density .61

pH 5.4

Solubility in water: Negligible

FIRE AND EXPLOSION HAZARD DATA

Flash Point (method Used)	N.A.	Autoignition Temperature	N.A.	Flammable limits	N.A.
---------------------------	------	--------------------------	------	------------------	------

Special Fire Fighting Procedures: None

Extinguishing media: Water

Unusual Fire and Explosion Hazards: Starch dust- hazardous mixture with air, Min. explosive limit = .04 oz/ft³. No defined max. limit. Min ignition temperature: 715°F. Min. electrical energy for ignition: 40 millijoules.

REACTIVITY DATA

Stability: STABLE	Incompatibility: NONE	Hazardous Polymerization will not occur	No hazardous decomposition products
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HEALTH HAZARD DATA

Route of entry :	Ingestion: Not a hazard	Inhalation: Nuisance Dust	Skin: Not a hazard
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Effects of overexposure	Acute none	Chronic none.
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Emergency and First Aid Procedures: Eyes, skin - Wash with water.

Product is regulated as a food by FDA and has GRAS affirmation. (21CFR182.90)

LFC000983

CORN PRODUCTS

Unit of CPC International, Inc.
P.O. Box 345, Argo IL, 60501
Information/Emergency Phone: (708) 563-6774
FAX (708) 653 6842

MATERIAL SAFETY DATA SHEET

Complies with 29CFR1910.1200
OSHA's Hazard Communication Standard
Prepared on : 06/12/90
By: H. E. Horn

PRODUCT: CORN PRODUCTS^(TM) 3005, INDUSTRIAL STARCH
CAS No. 9005-25-8

PRECAUTIONS FOR SAFE HANDLING AND USE

Precautionary statements: None

Neutralizing chemicals : None

If material is released or spilled:

Follow all Federal, State and Local regulations for non-hazardous waste disposal.

Waste disposal method: Dry sweep for disposal

Storage requirements: clean, dry, ambient conditions

CONTROL MEASURES

Ventilation Requirements: Local Exhaust.

Personal Protective Equipment

Eye: none

Gloves: none

Other Clothing: none

Respiratory protection:

Respirator TC-21-C-132 (3M company #8710)

OTHER REGULATORY INFORMATION

This product is included in the TSCA inventory of chemical substances.

FDA has affirmed this product to be GRAS.

DOT: not restricted

IATA: not restricted

The attached data has been compiled from sources which Corn Products, in good faith, believes to be dependable and is accurate and reliable to the best of our knowledge and belief. However, Corn Products cannot make any warranty or representation respecting the accuracy or completeness of the data and assumes no responsibility for any liability or damages relating thereto or for advising you regarding the protection of your employees, customers or others. (Users should make their own tests to determine the applicability of such information or the suitability of any products for specific use.)

BB

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: TRISTAR GCM1 80 ORANGE
 UCT CODE: 60-366B

HMS CODES: H F R P
 1 1 0

===== SECTION I - MANUFACTURER IDENTIFICATION =====

MANUFACTURER'S NAME: MIDLAND COLOR INX INC.
 ADDRESS: 1001 MORSE AVENUE, ELK GROVE VILLAGE, IL 60007
 EMERGENCY PHONE: 708-439-8770 INFORMATION PHONE: 708-439-8770
 DATE REVISED : 12-26-90 NAME OF PREPARER : Rick Westrom

===== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION =====

HAZARDOUS COMPONENTS	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE		WEIGHT PERCENT
		OSHA PEL	ACGIH TLV	OTHER	@ Hg @	TEMP	
AMMONIUM HYDROXIDE SOLUTION	1336-21-6	50 ppm	25 ppm		450.0	60F	2
ISOPROPYL ALCOHOL, ANHYDROUS	67-63-0	400 ppm	400 ppm		33.0	68F	2
DPM GLYCOL ETHER	34590-94-8	100 ppm	100 ppm		0.6	77F	3
*BARIUM COMPOUND	N/A				N/A		10.0

* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

WARNING
 INX Controlled Document
 This Document Must be Retained
 for 30 YEARS!
 OSHA CFR 1910.20 (d) (1) (ii) (B)

===== SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS =====

BOILING POINT: >200 F SPECIFIC GRAVITY (H2O=1): 1.1
 VAPOR DENSITY: HEAVIER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER
 MATERIAL V.O.C.: 0.54 LB/GL (65 G/L)
 SOLUBILITY IN WATER: Completely.
 APPEARANCE AND ODOR: Colored liquid and faint amine.

===== SECTION IV - FIRE AND EXPLOSION HAZARD DATA =====

FLASH POINT: >150 F METHOD USED: PMCC
 FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 1.1% UPPER: 27.0%
 EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG
 SPECIAL FIREFIGHTING PROCEDURES
 None known.

===== ADDITIONAL FIRE AND EXPLOSION HAZARDS =====

Charged containers exposed to high temperatures may explode or burst due to build up of steam pressure.

===== SECTION V - REACTIVITY DATA =====

STABILITY: STABLE
CONDITIONS TO AVOID
None known.

INCOMPATIBILITY (MATERIALS TO AVOID)
None known.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
None known.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

===== SECTION VI - HEALTH HAZARD DATA =====

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Adverse health effects from vapors or spray mists in poorly ventilated areas may include irritation of the mucous membranes of the nose, throat, and respiratory tract and symptoms of headache and nausea.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
EYES - Direct contact can cause irritation.
SKIN - Prolonged and repeated contact with product may cause skin irritation.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Redness, drying of skin, or other signs of irritation or contact dermatitis.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

HEALTH HAZARDS (ACUTE AND CHRONIC)
ACUTE - May cause irritation to skin, eyes, and intestinal systems.
***** CHRONIC ***** - None known.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
None

EMERGENCY AND FIRST AID PROCEDURES
INHALATION - Remove to fresh air.
EYES - Flush immediately with large amounts of water for at least 15 minutes. Take to a physician for medical attention.
SKIN - Remove with soap and water. If irritation develops consult a physician.
INGESTION - Drink 1 to 8 glasses of water to dilute. Do not induce vomiting. Consult a physician or poison control center immediately.

===== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE =====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

1. contain, or absorb with inert material. Transfer to containers for recovery or disposal. Prevent runoff into sewers, streams, or other bodies of water.

WASTE DISPOSAL METHOD

Dispose of in accordance with all local, state, or Federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not expose to extremes in temperatures. Avoid exposure to high temperatures.

OTHER PRECAUTIONS

Do not take internally. Avoid prolonged or repeated exposure to levels above TLV.

===== SECTION VIII - CONTROL MEASURES =====

RESPIRATORY PROTECTION

No special requirements under normal conditions of use.

VENTILATION

General room ventilation adequate under normal conditions of use (see Section II).

PROTECTIVE GLOVES

If prolonged or repeated contact is possible, rubber, PVC, or other impervious material should be worn.

EYE PROTECTION

Splash-proof goggles where eye contact may be a problem.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Furnish eyewash stations, and use good personal hygiene practices.

WORK/HYGIENIC PRACTICES

Wash hands before eating or using restrooms. Remove and wash contaminated clothing before reuse.

===== SECTION IX - DISCLAIMER =====

DISCLAIMER

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all source to assure proper use of these materials and the safety and health of employees.

MATERIAL SAFETY DATA SHEET

FOR PRINTING INK AND RELATED MATERIALS

INFORMATION ON THIS FORM IS PROPRIETARY INFORMATION AND IS FURNISHED SOLELY FOR THE USE OF OUR CUSTOMERS

HAZARD RATINGS

MSDS No. 26

Minimal..... 0
Slight..... 1
Moderate..... 2
Serious..... 3
Severe..... 4

HEALTH	1
FLAMMABILITY	2
REACTIVITY	0

DATE OF PREP. 5/86 PREPARED BY L. Nickoley

Section I

MANUFACTURER'S NAME: Cal/Ink Division, Flint Ink Corporation
STREET ADDRESS: 750 Gilman St. CITY, STATE AND ZIP CODE: Berkeley, CA. 94710
EMERGENCY TELEPHONE NUMBER: (415) 525-1188
PRODUCT CLASS: Water Base Flexographic V
TRADE NAME: MANUFACTURER'S CODE IDENTIFICATION:

Section II - HAZARDOUS INGREDIENTS

Ingredient:	Hazard Data:	
	ACGIH TLV, ppm.	Flash Point, °F. (CC)
Ethyl alcohol (CAS #64-17-5)	1000	57
2-butoxyethanol (CAS #111-76-2)	25 (skin)	
Ammonia (CAS #7664-41-7)	25	
	Eye contact or prolonged skin contact may cause irritation.	

Section III - PHYSICAL DATA

BOILING RANGE °F 170-212	VAPOR DENSITY: HEAVIER <input checked="" type="checkbox"/> vs. air LIGHTER <input type="checkbox"/>	LIQUID DENSITY: HEAVIER <input type="checkbox"/> vs. water LIGHTER <input checked="" type="checkbox"/>	TYPE OF ODOR Alcohol
APPEARANCE Colored liquid	EVAPORATION RATE FASTER <input type="checkbox"/> vs. Butyl Acetate SLOWER <input type="checkbox"/>	PERCENT VOLATILE WT. 20 maximum	

Section IV - FIRE & EXPLOSION DATA

FLAMMABILITY CLASSIFICATION	OSHA Combustible liquid Class II.	FLASH POINT °F >100 (Method Used) PHCC	LEL Approx. (Volatile portion)
EXTINGUISHING MEDIA:	<input checked="" type="checkbox"/> FOAM <input checked="" type="checkbox"/> "ALCOHOL" FOAM <input checked="" type="checkbox"/> CO2 <input checked="" type="checkbox"/> DRY CHEMICAL <input type="checkbox"/> WATER FOG <input type="checkbox"/> OTHE		
UNUSUAL FIRE AND EXPLOSION HAZARDS	Closed containers may explode if exposed to extreme heat.		
SPECIAL FIREFIGHTING PROCEDURES	None		

LFC000988

Section V - HEALTH HAZARD DATA

MSDS No. 26. . .

EFFECTS OF OVEREXPOSURE

Inhalation: Concentrated vapors may cause headache &/or nausea.
Eyes: Can cause irritation.
Skin: Prolonged or repeated contact may cause irritation.
Ingestion: Can cause gastrointestinal irritation & illness.

PRIMARY ROUTE(S) OF ENTRY:

DERMAL

INHALATION

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Remove to fresh air.
Eyes: Flush immediately with large amounts of water. See physician.
Skin: Remove with soap & water. Remove contaminated clothing.
Ingestion: Dilute with water. Do not induce vomiting. Consult physician or poison control.

Section VI - REACTIVITY DATA

PRODUCT STABILITY

STABLE

UNSTABLE

CONDITIONS TO AVOID

Contact with strong acids.

Section VII - SPILL OR LEAK PROCEDURES

PROCEDURE WHEN MATERIAL SPILLED OR RELEASED

Small spills may be wiped up with water. Contain large spills with absorbent material.
Avoid discharge to waterways.

WASTE DISPOSAL METHOD

Dispose of in accordance with local, state & federal regulations.

Section VIII - SPECIAL PROTECTION INFORMATION

VENTILATION

Supply sufficient ventilation to keep exposure levels below TLV limits.

PROTECTIVE GLOVES

Required for prolonged or repeated contact.

RESPIRATORY PROTECTION

None required with
normal use.

EYE PROTECTION

Use safety glasses if splash
potential exists.

OTHER PROTECTIVE EQUIPMENT

None necessary under normal circumstances.

Section IX - SPECIAL PRECAUTIONS

HANDLING AND STORING

Keep containers closed when not in use.

OTHER PRECAUTIONS

Keep from freezing.

THIS FORM IS SUPPLIED AS AN INDUSTRY SERVICE BY THE NATIONAL ASSOCIATION OF PRINTING INK MANUFACTURERS, INC.

(Information on this form is supplied by the individual ink manufacturer)

LFC000989

MATERIAL SAFETY DATA SHEET

FOR PRINTING INK AND RELATED MATERIALS

INFORMATION ON THIS FORM IS PROPRIETARY INFORMATION AND FURNISHED
SOLELY FOR THE USE OF OUR CUSTOMERS

HAZARD RATINGS

Minimal..... 0
Slight..... 1
Moderate..... 2
Serious..... 3
Severe..... 4

MSDS No. 25.

HEALTH	1
FLAMMABILITY	2
REACTIVITY	0

DATE OF PREP. 11/85

PREPARED BY L. Nickoley

Section I

MANUFACTURER'S NAME: Cal/Ink Division, Flint Ink Corporation

STREET ADDRESS: 750 Gilman St.

CITY, STATE AND ZIP CODE: Berkeley, CA. 94710

EMERGENCY TELEPHONE NUMBER: (415) 525-1188

PRODUCT CLASS: Water Base Flexographic IV

TRADE NAME: See attached sheet

MANUFACTURER'S CODE IDENTIFICATION: See attached sheet.

Section II - HAZARDOUS INGREDIENTS

Ingredient:	Hazard Data:
Pigment Red 53:1 Red Lake C	Two feeding studies of rats & mice have been completed on D&C #9 (Pigment Red 53:1). The study conducted by Litton Bionetics found no statistically significant carcinogenic effects. The study conducted by Battelle Laboratories found a statistically significant carcinogenic effect on the spleens of male rats. D&C #9 is provisionally listed, by the Food and Drug Administration, for use as a color additive for external use in such products as lipstick, mouthwash & dentifrices.
ethyl alcohol (CAS #64-17-5)	ACGIH TLV, ppm. 1000 Flash Point, °F. (CC) 57
2-Propoxyethanol (CAS #2807-30-9)	None established 120 Eye contact or prolonged skin contact may cause irritation.

Section III - PHYSICAL DATA

BOILING RANGE °F 170-212	VAPOR DENSITY: HEAVIER <input checked="" type="checkbox"/> vs. air LIGHTER <input type="checkbox"/>	LIQUID DENSITY: HEAVIER <input type="checkbox"/> vs. water LIGHTER <input checked="" type="checkbox"/>	TYPE OF ODOR Alcohol
APPEARANCE Colored liquid	EVAPORATION RATE FASTER <input checked="" type="checkbox"/> vs. Butyl Acetate SLOWER <input type="checkbox"/>	PERCENT VOLATILE WT. 20 maximum	

Section IV - FIRE & EXPLOSION DATA

FLAMMABILITY CLASSIFICATION	OSHA Flammable liquid Class II. DOT Combustible liquid	FLASH POINT °F > 100 (Method Used) PMCC	LEL Approx. 3% (Volatile portion)
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EXTINGUISHING MEDIA:

FOAM ☒ "ALCOHOL" FOAM ☒ CO2 ☒ DRY CHEMICAL ☐ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode if exposed to extreme heat.

SPECIAL FIREFIGHTING PROCEDURES

None

LFC000990



GENERAL OFFICE — 1404 FOURTH STREET / BERKELEY, CA 94710 / 415-525-1188

The attached Material Safety Data Sheets No. 26 & 27 provide safety data for the following inks:

370 Series Flexo Hydroline Envelope

Ink Numbers

A323-005-0562	A324-007-8136	A324-050-7251
A323-006-0545	A324-007-8368	A324-050-8008
A323-006-0554	A324-008-7980	A324-055-8186
A323-007-0551	A324-008-8353	A324-058-7127
A323-007-0620	A324-008-8491	A324-058-8424
A323-008-0618	A324-008-8497	A324-060-8007
323-008-2336	A324-009-4188	A324-060-8341
323-008-3043	A324-009-7110	A324-070-7131
323-008-3075	A324-009-7246	A324-071-8498
323-008-3077	A324-009-7506	A324-072-8438
A323-009-0567	A324-009-8191	A324-078-7140
A323-023-0563	A324-009-8332	A324-079-7522
323-025-2929	A324-009-8443	A324-080-7213
323-026-2999	A324-010-7650	A324-080-7806
323-026-3041	A324-010-8307	A324-083-8260
A323-036-0544	A324-011-7923	A324-084-7802
A323-070-0621	A324-011-8473	A324-090-7106
323-078-3059	A324-014-7229	A324-092-8446
A323-078-5338	A324-014-8430	A324-094-7918
A323-094-0555	A324-018-7250	A324-104-7211
A323-095-0556	A324-019-7475	A324-106-7236
A323-104-5362	A324-020-7255	A324-107-7837
G323-110-0519	A324-025-7448	A324-109-7762
A323-113-0561	A324-025-8360	A324-109-8375
A323-172-0575	A324-026-8448	A324-110-8331
323-174-2371	A324-028-7865	A324-120-7777
G323-180-0519	A324-028-8333	A324-120-7808
A323-180-0548	A324-032-7092	A324-125-7472
A323-209-0531	A324-036-8436	A324-125-7743
G323-214-0537	A324-038-8407	A324-139-8135
A323-254-0611	A324-039-7248	A324-140-8134
A323-280-0610	A324-040-7034	A324-140-8342
323-404-3034	A324-040-7305	A324-155-7032
	A324-040-7999	A324-170-7095
A324-004-8267	A324-041-7217	A324-170-8125
A324-005-8432	A324-044-7121	A324-170-8126
A324-006-8365	A324-046-7987	A324-172-4028
A324-007-7392	A324-046-8441	A324-175-7020
A324-007-7946	A324-047-7093	A324-180-7096
A324-007-7973	A324-048-7123	A324-204-7234

Ink Numbers

A324-205-8323
A324-206-7232
A324-206-7471
A324-207-7399
A324-209-7233
A324-209-8354
A324-210-4118
A324-210-4123
A324-210-7400
A324-210-8190
A324-212-8308
A324-213-8413
A324-213-8467
A324-216-8240
A324-254-7181
A324-301-8233
A324-307-7935
A324-307-8284
A324-500-7108
A324-506-4040



MATERIAL SAFETY DATA SHEET

WXg

SECTION I

GENERAL INFORMATION

Manufacturer

Flint Ink Corporation
25111 Glendale
Detroit, MI 48239

24 hr. Medical Emergency Numbers:

1-800-225-5635 ext. 039
(612)221-3999 (Minneapolis/St. Paul only)

SupplierProduct/Technical Information:Environmental Information:

313-458-7500

Preparation Date: 03-01-93Applicable Products

NON-SKID SIZE
REW108

Product IdentificationType: Water Based Ink #Class: Packaging - GeneralSystem: Fictographic

SECTION II

INGREDIENTS

<u>Name</u>	<u>%</u>	<u>8 hr. Exposure Limit</u>	
		<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Water	50-70	NE	NE
Polymer Resins	10-25	NE	NE
Pigments	10-25	NE	NE
Amine Compound	<5	10 ppm	10 ppm

NE = none established

SECTION III

PHYSICAL PROPERTIES

<u>Boiling Point:</u>	210-230°F	<u>Appearance & Odor:</u>	Colored liquid, with ammonia odor
<u>Vapor Pressure:</u>	> 10 mm Hg	<u>VOC (weight %):</u>	(g/l less water):
<u>Vapor Density:</u>	> 1.0	(method: 24A, calculated)	
(air = 1)		<u>Density:</u>	lb/gal.
<u>Solubility in Water:</u>	complete	<u>Evaporation Rate:</u>	1.0
<u>pH:</u>		(water = 1)	

SECTION IV

FIRE AND EXPLOSION HAZARD INFORMATION

<u>Flash Point:</u>	<u>Flammable Limits (LEL):</u> Not determined for finished ink		
<u>Extinguishing Media:</u>	Foam, carbon dioxide, dry chemical, or water fog		
<u>Special Fire Fighting Procedures:</u>	Use water fog to cool containers to prevent pressure build up. Use self contained breathing apparatus where appropriate to fight fire. Wear protective clothing, fight fire from safe distance.		
<u>Unusual Fire and Explosion Hazards:</u>	None known.		
<u>NFPA & HMIS Ratings:</u>	Health - 2	Flammability -	Reactivity - 0

FLINT INK CORPORATION

WXg

SECTION V

REACTIVITY DATA

Stability: Unstable _____
Stable X

Materials to Avoid: Strong oxidizing agents, strong acids

Conditions to Avoid: Extreme heat, open flames or sparks

Decomposition by products: Acrid Smoke
Oxides of Carbon (carbon monoxide, carbon dioxide)
Oxides of Nitrogen (nitrogen dioxide)

Polymerization Reactions: May Occur _____
Will Not Occur X

SECTION VI

HEALTH HAZARD DATA

Primary Routes Of Entry: Inhalation, eye contact, skin contact

Effects of Exposure (acute and chronic):

Skin: Direct contact with liquid may cause irritation. Sensitive individuals may develop dermatitis.

Eyes: Direct contact with liquid will cause irritation. Vapors may irritate eyes.

Ingestion: Ingestion of liquid may produce nausea, vomiting, and systemic illness.

Inhalation: Inhalation of vapors can cause respiratory tract irritation.

Medical Conditions to Avoid: None known.

Emergency and First Aid Procedures:

Skin: Wash skin with soap and water. Remove contaminated clothing. Contact physician if redness or irritation occurs.

Eyes: Flush eyes with water for 15 minutes. Contact physician if irritation persists.

Ingestion: Seek medical attention. Do not induce vomiting. Call 24 hr. emergency phone number on page 1 for treatment information.

Inhalation: Remove to fresh air. Contact a physician.

* Carcinogenicity: NTP IARC Monograph OSHA Regulated
No No No

* Refers to components

FLINT INK CORPORATION

WXg

SECTION VII

SAFE HANDLING PRACTICES

Information in this section is based on this product only. If the product has been mixed or contaminated with other materials, consult the material safety data sheets for these materials for additional safe handling information.

Spill Procedure:	Absorb or contain with sand or an absorbent material, and dispose of in approved manner. Do not allow spill to enter sewer or water courses without authorization from appropriate regulatory agencies. Wear appropriate protective equipment.
Waste Disposal:	Dispose in accordance with Federal, state, or local regulations. Solids may be separated out by flocculation and collected for incineration. "Cleaned" water may be acceptable to your local sewer authority as they permit. Otherwise, industrial waste water treatment may be necessary.
Handling and Storage:	Protect container from freezing. Avoid high temperatures. Do not stack 55 gallon containers more than 2 high. Handle 55 gallon containers with appropriate equipment. Keep containers closed when not in use. For industrial use only.

SECTION VIII

CONTROL MEASURES

Respiratory Protection:	Not normally required with adequate ventilation. Use MSHA/NIOSH approved respirator in accordance with 29 CFR 1910.134, when adequate ventilation is not available.
Eye Protection:	Splashproof safety goggles
Skin Protection:	None required. Vinyl or rubber gloves recommended for prolonged skin contact.
Ventilation:	Good general ventilation should be adequate.
Other Protective Equipment:	Convenient eye wash stations should be provided in the workplace.

SECTION IX

REGULATORY INFORMATION

SARA Title III, Section 313

Compound NameCAS #To be Weight

* Compounds listed in this section have been listed by the U.S. EPA under Section 313, The Toxic Chemical Release Inventory.

DISCLAIMER

Every reasonable effort has been made to ensure that the safety information on this sheet is accurate. But because Flint Ink has no control over the conditions under which the product will be used, liability is limited exclusively to replacement or refund of the purchase price of this product. Except as stated herein, there are no expressed or implied warranties, including implied warranties of merchantability or fitness for a particular purpose. Flint Ink assumes no liability for injury or incidental or consequential damages arising out of the storage, handling, or use of this product.

05 65

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: TRISTAR DISPLAY DENSE BLACK
 PRODUCT CODE: TS-090

HMIS CODES: H F R P
 1 1 0

===== SECTION I - MANUFACTURER IDENTIFICATION =====

MANUFACTURER'S NAME: INX INTERNATIONAL INK CO.
 ADDRESS: 1001 MORSE AVENUE, ELK GROVE VILLAGE, IL 60007
 EMERGENCY PHONE: 800-535-5053 INFORMATION PHONE: 708-439-8770
 DATE REVISED : 08-01-92 NAME OF PREPARER : Rick Westrom

===== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION =====

HAZARDOUS COMPONENTS	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE mm Hg @ TEMP	WEIGHT PERCENT
		OSHA PEL	ACGIH TLV	OTHER		
ISOPROPYL ALCOHOL, ANHYDROUS	67-63-0	400 ppm	400 ppm		33.0 68F	4

*** No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present. ***

WARNING
 INX Controlled Document
 This Document Must be Retained
 for 30 YEARS!
 OSHA CFR 1910.20 (d) (1) (ii) (B)

===== SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS =====

BOILING POINT: >200 F SPECIFIC GRAVITY (H2O=1): 1.1
 VAPOR DENSITY: HEAVIER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER
 MATERIAL V.O.C.: 0.45 LB/GL (54 G/L)
 SOLUBILITY IN WATER: Completely.
 APPEARANCE AND ODOR: Colored liquid and faint amine.

===== SECTION IV - FIRE AND EXPLOSION HAZARD DATA =====

FLASH POINT: >150 F METHOD USED: PMCC
 FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 2.0% UPPER: 12.0%
 EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG
 SPECIAL FIREFIGHTING PROCEDURES
 None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Containers exposed to high temperatures may explode or burst due to build up of steam pressure.

===== SECTION V - REACTIVITY DATA =====

ABILITY: STABLE
DITIONS TO AVOID

None known.

INCOMPATIBILITY (MATERIALS TO AVOID)

None known.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

None known.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

===== SECTION VI - HEALTH HAZARD DATA =====

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Adverse health effects from vapors or spray mists in poorly ventilated areas may include irritation of the mucous membranes of the nose, throat, and respiratory tract and symptoms of headache and nausea.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE

EYES - Direct contact can cause irritation.

SKIN - Prolonged and repeated contact with product may cause skin irritation.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Redness, drying of skin, or other signs of irritation or contact dermatitis.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

HEALTH HAZARDS (ACUTE AND CHRONIC)

ACUTE - May cause irritation to skin, eyes, and intestinal systems.

***** CHRONIC ***** - None known.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

None

EMERGENCY AND FIRST AID PROCEDURES

INHALATION - Remove to fresh air.

EYES - Flush immediately with large amounts of water for at least 15 minutes. Take to a physician for medical attention.

SKIN - Remove with soap and water. If irritation develops consult a physician.

INGESTION - Drink 1 to 8 glasses of water to dilute. Do not induce Vomiting. Consult a physician or poison control center immediately.

===== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE =====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

contain, or absorb with inert material. Transfer to containers for recovery or disposal. Prevent runoff into sewers, streams, or other bodies of water.

WASTE DISPOSAL METHOD

Dispose of in accordance with all local, state, or Federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not expose to extremes in temperatures. Avoid exposure to high temperatures.

OTHER PRECAUTIONS

Do not take internally. Avoid prolonged or repeated exposure to levels above TLV.

===== SECTION VIII - CONTROL MEASURES =====

RESPIRATORY PROTECTION

No special requirements under normal conditions of use.

GENERAL VENTILATION

General room ventilation adequate under normal conditions of use (see Section II).

PROTECTIVE GLOVES

If prolonged or repeated contact is possible, rubber, PVC, or other impervious material should be worn.

EYE PROTECTION

Splash-proof goggles where eye contact may be a problem.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Furnish eyewash stations, and use good personal hygiene practices.

WORK/HYGIENIC PRACTICES

Wash hands before eating or using restrooms. Remove and wash contaminated clothing before reuse.

===== SECTION IX - DISCLAIMER =====

DISCLAIMER

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SECTION 7: HANDLING AND STORAGE

HANDLING INFORMATION

Wear appropriate protective equipment when working with this product.

STORAGE INFORMATION

Avoid temperature extremes in storage.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing is likely. Have eye washes available where eye contact can occur.

Skin Protection: Prevent prolonged or repeated contact by using rubber gloves and appropriate protective clothing. Launder contaminated clothing before reuse.

Respiratory Protection: Not normally required. Use NIOSH/MSHA approved respirator if conditions warrant.

Ventilation: General dilution ventilation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	WHITE
Odor:	Mild, sweet
Odor Threshold:	Not established
Weight per Gallon:	9.1 lbs.
Specific Gravity:	1.09
% Solids by Weight:	55.3
pH:	4.8
Boiling Range:	Greater than 200 F (93 C)
Freezing/Melting Point:	Not established
Vapor Pressure:	Not established
Vapor Density:	Not established
Evaporation Rate:	Not established
Water/Oil Partition Coefficient:	Not established

VOC: 4 g VOC/liter of material
(VOC theoretically determined using EPA
Publication 450/3-84-019)

VOC, less water: 7 g VOC/liter of material, less water and
exempt solvents
(VOC theoretically determined using EPA
Publication 450/3-84-019.)

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable

Incompatibility: Not established

Hazardous Decomposition: Not established

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

No data available

SECTION 12: ECOLOGICAL INFORMATION

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORTATION INFORMATION

UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT)

DOT Proper Shipping Name: Not regulated

SECTION 15: REGULATORY INFORMATION

FEDERAL

Toxic Substances Control Act (TSCA)

Section 8(b) - Inventory Status

All components of this product are registered under the regulations of the Toxic Substances Control Act.

Section 12(b) - Export Notice Requirements

This product contains a chemical substance that is currently on the EPA's Section 12(b) Export List. Within seven days of entering into a contract to export and certainly no later than the day of export, the agent of export must notify the EPA of their intent.

Contact the H.B. Fuller TSCA Compliance Manager at 612/481-4816 for the identity of the Section 12(b) chemical(s).

SARA TITLE III

Section 313: This product does not contain regulated levels of any toxic chemical subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.

Chemical Name	CAS Number	Percent
---------------	------------	---------

STATE REGULATIONS

California Proposition 65: Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

This product contains chemical(s) known to the state of California to cause cancer or reproductive damage.
<0.0041% Acetaldehyde 75-07-0
listed April 1, 1988

WHMIS IDENTIFICATION/OTHER INTERNATIONAL REGULATIONS

Not regulated

SECTION 16: ADDITIONAL INFORMATION

In storage, monomer vapors will migrate from the emulsion and establish an equilibrium between the headspace in the storage container and the liquid emulsion. Levels in excess of acceptable exposures can accumulate in non-vented headspaces above the emulsion. All procedures appropriate for a confined space entry should be completed prior to performing any work in a bulk storage tank.

HMIS RATING

Health-1 Flammability-0 Reactivity-0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to the H.B. Fuller Company from its suppliers, and because the H.B. Fuller Company has no control over the conditions of handling and use, the H.B. Fuller Company makes no warranty, express or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and the H.B. Fuller Company assumes no responsibility from use or reliance thereon. It is the responsibility of the user of H.B. Fuller Company products to comply with all applicable federal, state and local laws and regulations.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable

Incompatibility: Not established

Hazardous Decomposition: Not established

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

No data available

SECTION 12: ECOLOGICAL INFORMATION

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. Environmental Protection Agency Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORTATION INFORMATION

UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT)

DOT Proper Shipping Name: Not regulated

SECTION 15: REGULATORY INFORMATION

FEDERAL

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SARA TITLE III

Section 313: This product does not contain regulated levels of any toxic chemical subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.

Chemical Name

CAS Number

Percent

STATE REGULATIONS

California Proposition 65: Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

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(0.0041% Acetaldehyde

75-07-0

listed April 1, 1988

HMIS IDENTIFICATION OTHER INTERNATIONAL REGULATIONS

Not regulated

SECTION 16: ADDITIONAL INFORMATION

In storage, monomer vapors will migrate from the emulsion and establish an equilibrium between the headspace in the storage container and the liquid emulsion. Levels in excess of acceptable exposures can accumulate in non-vented headspaces above the emulsion. All procedures appropriate for a confined space entry should be completed prior to performing any work in a bulk storage tank.

HMIS RATING

Health-1

Flammability-0

Reactivity-0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to the H.B. Fuller Company from its suppliers and because the H.B. Fuller Company has no control over the conditions of handling and use, the H.B. Fuller Company makes no warranty, express or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is given as advisory only and is not information and consideration, and the H.B. Fuller Company assumes no responsibility from use or reliance thereon. It is the responsibility of the user of H.B. Fuller Company products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

H.B. Fuller Company
1200 Walters Boulevard
Vadnais Heights, MN 55110
Phone: 612-481-3300
Fax: 612-481-3309

MSDS INFORMATION

Preparation Date: 08/01/93
Supersedes: 03/15/93
Prepared By: Industrial Hygiene
Phone Number: 612-481-4842

Medical Emergency Phone Number: 1-800-228-5635 ext 018
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

Product Name/Number: WB-3701 FF
Product Description (product use): Water based adhesive

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS). Unlisted ingredients are not 'hazardous' per the OSHA standard and/or are not found on the WHMIS ingredient disclosure list.

Chemical/CAS Number	Percent	OSHA PEL	ACGIH TLV
---------------------	---------	----------	-----------

See Section 16 for additional information.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

No specific warnings for normal use conditions.

POTENTIAL HEALTH EFFECTS

Eyes: Eye contact with liquid product may cause irritation.

Skin: Prolonged or repeated contact with liquid product may cause irritation.

Inhalation: Inhalation is not an anticipated route of exposure.

Ingestion: Not an anticipated route of exposure. Small amounts are not anticipated to be harmful.

Chronic: No anticipated chronic effects.

REGULATED CARCINOGEN STATUS:

This product does not contain regulated levels of NTP, IARC, ACGIH or OSHA Listed carcinogens.

Existing Health Conditions Affected by Exposure: No known effects on other illnesses.

SECTION 4: FIRST AID MEASURES

If in eye: Flush immediately with water for 15 minutes. Consult a physician if irritation persists.

If on skin: Wash affected area with soap and water. Launder contaminated clothing before reuse.

If vapors inhaled: Remove subject to fresh air.

If ingested: If person can swallow, give one glass of water or milk. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point/Method: Non-flammable

Upper Explosive Limit/Lower Explosive Limit: Not applicable

Autoignition Temperature: Not applicable

Appropriate Extinguishers: Non-flammable in liquid state; use water spray, foam, dry chemical or carbon dioxide on dried product.

Special Fire Fighting Procedures: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

Unusual Fire and Explosion Hazards: There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

Hazardous Combustion Product: Incomplete combustion can yield low molecular weight hydrocarbons, carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.

PHYSICAL PROPERTIES

BOILING POINT/RANGE:
C (288 F)

MELTING POINT:
NA

FREEZING POINT:
12 C (54 F)

MOLECULAR WEIGHT:
40.01 (DRY BASIS)

SPECIFIC GRAVITY(H2O=1):
1.525 @ 20 C

VAPOR PRESSURE(MM HG):
1.6 @ 20 C

VAPOR DENSITY(AIR=1):
NA

SOLUBILITY IN H2O:
COMPLETE

% VOLATILES BY VOLUME:
50

APPEARANCE AND ODOR:

WATER WHITE, CLEAR TO SLIGHTLY TURBID LIQUID. ESSENTIALLY ODORLESS.

FIRE AND EXPLOSION DATA

FLASH POINT:
NONE

FLAMMABLE LIMITS:
LOWER: NA UPPER: NA

AUTOIGNITION TEMP.:
NA

EXTINGUISHING MEDIA:

NA

SPECIAL FIRE FIGHTING PROCEDURES:

KEEP PRODUCT OUT OF WATER SOURCES AND SEWERS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NA

REACTIVITY DATA

STABILITY:
STABLE

CONDITIONS CONTRIBUTING TO INSTABILITY: NA

INCOMPATIBILITY-AVOID CONTACT WITH:

STRONG
ACIDS

REACTS VIOLENTLY OR EXPLOSIVELY WITH WATER, SOME ACIDS AND ORGANIC
MATERIALS SUCH AS CHLORINATED HYDROCARBONS.

TOXIC CARBON MONOXIDE GAS CAN FORM UPON CONTACT WITH FOOD AND BEVERAGE
PRODUCTS IN ENCLOSED SPACES AND CAUSE DEATH.

HAZARDOUS DECOMPOSITION THERMAL AND OTHER:

WILL REACT WITH SOME METALS, SUCH AS ALUMINUM, TIN OR ZINC TO GENERATE
HYDROGEN GAS. HYDROGEN GAS CAN RESULT IN EXPLOSIVE HAZARDS IN CONFINED
SPACES.

CONDITIONS TO AVOID:

- NOT APPLICABLE

NE - NOT ESTABLISHED

- INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

REACTIVITY DATA - CONTINUED

MOISTURE.

TOXICITY

ROUTE:	ANIMAL:	DATA:
ORAL	NA	NE
DERMAL	NA	NE
INHALATION	NA	NE

TOXIC EFFECTS/ROUTES OF ENTRY

EYE EFFECTS: CORROSIVE

CAUSES EYE BURNS. MAY CAUSE BLINDNESS.

SKIN EFFECTS: CORROSIVE

CAUSES SKIN BURNS.

OTHER TOXIC EFFECTS:

THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS LISTED BY NTP, IARC OR OSHA
AS CARCINOGENS.
SET ORGAN TOXIN: NA

TOXICITY COMMENTS:

INGESTION CAUSES SEVERE BURNS OF THE MUCOUS MEMBRANES OF THE MOUTH,
THROAT, ESOPHAGUS AND STOMACH.

INHALATION OF MIST MAY CAUSE DAMAGE TO UPPER RESPIRATORY TRACT AND EVEN
TO THE LUNG TISSUE.

CHRONIC: CONTACT WITH EVEN DILUTE SOLUTION MAY RESULT IN MULTIPLE AREAS
OF SUPERFICIAL DESTRUCTION OF THE SKIN OR PRIMARY IRRITANT DER-
MATITIS. SIMILARLY, INHALATION OF THE MIST MAY RESULT IN VARY-
ING DEGREES OF IRRITATION OF THE RESPIRATORY TRACT TISSUES.
MAY VARY FROM MILD IRRITATION OF NASAL MUCOUS MEMBRANES TO
SEVERE INFLAMMATION OF THE LUNGS.

HEALTH HAZARD INFORMATION

PERMISSIBLE EXPOSURE LIMITS:

PERMISSIBLE EXPOSURE LIMITS ARE LISTED IN THE 'INGREDIENTS' SECTION.

EMERGENCY FIRST AID

INGESTION:

IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE WATER TO DRINK. GET

(R) - NOT APPLICABLE

NE - NOT ESTABLISHED

(R) - INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

HEALTH HAZARD INFORMATION - CONTINUED

MEDICAL ATTENTION IMMEDIATELY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

DERMAL:

IF ON SKIN, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE. DESTROY CONTAMINATED SHOES.

EYE CONTACT:

IF IN EYES, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 30 MINUTES. GET MEDICAL ATTENTION.

INHALATION:

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS:

INVESTIGATE ENGINEERING TECHNIQUES TO REDUCE EXPOSURES BELOW AIRBORNE EXPOSURES LIMITS. PROVIDE VENTILATION IF NECESSARY TO CONTROL EXPOSURE LEVELS BELOW AIRBORNE EXPOSURE LIMITS. IF PRACTICAL, USE LOCAL MECHANICAL EXHAUST VENTILATION AT SOURCES OF AIR CONTAMINATION SUCH AS OPEN PROCESS EQUIPMENT. CONSULT ACGIH VENTILATION MANUAL OR NFPA STANDARD 91 FOR DESIGN OF EXHAUST SYSTEMS.

*

FOR PROPER TANK ENTRY PROCEDURES, SEE ANSI Z117.1-1977. MONITOR CARBON MONOXIDE AND OXYGEN LEVELS IN TANKS AND ENCLOSED SPACES.

EYE:

FACE SHIELD GOGGLES

CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS CHEMICAL.

HAND(GLOVE TYPE):

SYNTHETIC RUBBER

RESPIRATOR TYPE:

AVOID BREATHING DUST OR MIST. USE NIOSH/MSHA APPROVED RESPIRATORY PROTECTION EQUIPMENT APPROPRIATE TO THE MATERIAL AND/OR ITS COMPONENTS WHERE AIRBORNE EXPOSURE IS LIKELY. FULL FACEPIECE EQUIPMENT IS RECOMMENDED AND, IF USED, REPLACES NEED FOR FACE SHIELD OR GOGGLES. IF

- NOT APPLICABLE

NE - NOT ESTABLISHED

(R) - INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

SPECIAL PROTECTION INFORMATION - CONTINUED

EXPOSURES CANNOT BE KEPT AT A MINIMUM WITH ENGINEERING CONTROLS, CONSULT RESPIRATOR MANUFACTURER TO DETERMINE APPROPRIATE TYPE EQUIPMENT FOR GIVEN APPLICATION. OBSERVE RESPIRATOR USE LIMITATIONS SPECIFIED BY NIOSH/MSHA OR THE MANUFACTURER. FOR EMERGENCY AND OTHER CONDITIONS WHERE THERE MAY BE A POTENTIAL FOR SIGNIFICANT EXPOSURE, USE AN APPROVED FULL FACE POSITIVE-PRESSURE, SELF-CONTAINED BREATHING APPARATUS OR POSITIVE-PRESSURE AIRLINE WITH AUXILIARY SELF-CONTAINED AIR SUPPLY. RESPIRATORY PROTECTION PROGRAMS MUST COMPLY WITH 29 CFR SECTION 1910.134.

OTHER PROTECTIVE EQUIPMENT:

RUBBER BOOTS, COTTON WORK CLOTHES, RUBBER SUIT OR APRON.

SPECIAL HANDLING AND STORAGE CONDITIONS

DO NOT GET IN EYES, ON SKIN OR CLOTHING. AVOID BREATHING MISTS OR SPRAYS. USE WITH ADEQUATE VENTILATION. DO NOT TAST OR SWALLOW. WASH THOROUGHLY AFTER HANDLING. KEEP CONTAINER CLOSED. AVOID RAPID TEMPERATURE RISE, VIOLENT SPATTERING OR EXPLOSIVE ERUPTIONS. ALWAYS ADD CAUSTIC SODA TO WATER WHEN MIXING. NEVER ADD WATER TO CAUSTIC SODA. HEAT WATER TO 80 DEG TO 100 DEG F BEFORE ADDING PRODUCT. ADD SMALL AMOUNTS OF PRODUCT SLOWLY AND EVENLY OVER SURFACE OF WATER CONSTANT STIRRING. NEVER INCREASE CONCENTRATION OF PRODUCT IN SOLUTION BY MORE THAN 5 % WITH ANY SINGLE ADDITION. WATER SHOULD NOT EXCEED 160 DEG F DURING ADDITION.

SPILL MANAGEMENT

DIKE AND CONTAIN LIQUID SPILL WITH INERT MATERIAL (E.G. SAND OR EARTH). REMOVE SOLUTIONS WITH VACUUM TRUCK. FOR SMALL SPILLS FLUSH SPILL OR LEAK AREA WITH LARGE AMOUNTS OF WATER AND NEUTRALIZE WITH DILUTE ACID.

DISPOSAL PROCEDURES

DILUTE WITH WATER AND NEUTRALIZE WITH DILUTE ACID.

CONSULT FEDERAL, STATE, OR LOCAL AUTHORITIES FOR PROPER DISPOSAL PROCEDURES.

ADDITIONAL INFORMATION

WARNING! THIS PRODUCT MAY CONTAIN EXTREMELY SMALL (TRACE) AMOUNT(S) OF CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM (PER PROPOSITION 65).
INGREDIENTS SUBJECT TO SARA TITLE III, SECTION 313 REPORTING, IF ANY ARE:

- NOT APPLICABLE NE - NOT ESTABLISHED
- (R) - INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

ADDITIONAL INFORMATION - CONTINUED

PRESENT, ARE IDENTIFIED IN THE 'INGREDIENTS-HAZARD CLASSIFICATION'
SECTION OF THIS MSDS.

MSDS PREPARED BY PRODUCT SAFETY

ELF ATOCHEM NORTH AMERICA, INC. BELIEVES THAT THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN (INCLUDING DATA AND STATEMENTS) ARE ACCURATE AS OF THE DATE HEREOF. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. THE INFORMATION PROVIDED HEREIN RELATES ONLY TO THE SPECIFIC PRODUCT DESIGNATED AND MAY NOT BE VALID WHERE SUCH PRODUCT IS USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. FURTHER, SINCE THE CONDITIONS AND METHODS OF USE OF THE PRODUCT AND OF THE INFORMATION REFERRED TO HEREIN ARE BEYOND THE CONTROL OF ELF ATOCHEM, ELF ATOCHEM EXPRESSLY DISCLAIMS ANY AND ALL LIABILITY AS TO ANY RESULTS OBTAINED OR ARISING FROM ANY USE OF THE PRODUCT OR RELIANCE ON SUCH INFORMATION.

(R) - NOT APPLICABLE NE - NOT ESTABLISHED
(R) - INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

WB-3180

Date Printed: 10/13/94

Page 1 of 6

MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

H.B. Fuller Company
3200 Wollers Boulevard
Rochelle Heights, IL 60430
Phone: 612-481-3300
Fax: 612-481-3309

NEWS INFORMATION

Preparation Date: 07/30/93
Prepared By: Industrial Hygiene
Phone Number: 612-481-4042

Medical Emergency Phone Number: 1-800-228-4635 ext 018
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

Product Name/Number: WB-3180
Product Description (product use): Water based adhesive

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS). Unlisted ingredients are not 'hazardous' for the OSHA standard and/or are not found on the WHMIS ingredient disclosure list.

Chemical/CAS Number	Percent	OSHA PEL	ACGIH TLV
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See Section 16 for additional information.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

No specific warnings for normal use conditions.

POTENTIAL HEALTH EFFECTS

Eyes: Eye contact with liquid product may cause irritation.

Skin: Prolonged or repeated contact with liquid product may cause irritation.

Inhalation: Inhalation is not an anticipated route of exposure.

Ingestion: Not an anticipated route of exposure. Small amounts are not anticipated to be harmful.

Chronic: No anticipated chronic effects.

REGULATED CARCINOGEN STATUS:

This product does not contain regulated levels of NTP, IARC, NCGIH or OSHA listed carcinogens.

Existing health conditions affected by exposure: No known effects on other illnesses.

SECTION 4: FIRST AID MEASURES

If in eye: Flush immediately with water for 15 minutes. Consult a physician if irritation persists.

If on skin: Wash affected area with soap and water. Launder contaminated clothing before reuse.

If vapors inhaled: Remove subject to fresh air.

If ingested: Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point/Method: Non-flammable

Upper Explosive Limit/Lower Explosive Limit: Not applicable

Autoignition Temperature: Not applicable

Appropriate Extinguishers: Non-flammable in liquid state, use water, spray, foam, dry chemical or carbon dioxide on dried product.

Special Fire Fighting Procedures: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

Unusual Fire and Explosion Hazards: There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

Hazardous Combustion Product: Incomplete combustion can yield low molecular weight hydrocarbons, carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.

SECTION 7: HANDLING AND STORAGE

HANDLING INFORMATION

Wear appropriate protective equipment when working with this product.

STORAGE INFORMATION

Avoid temperature extremes in storage.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing is likely. Have eye washes available where eye contact can occur.

Skin Protection: Prevent prolonged or repeated contact by use of rubber gloves and appropriate protective clothing. Launder non-contaminated clothing before reuse.

Respiratory Protection: Not normally required. Use NIOSH-approved respirator if conditions warrant.

Ventilation: General dilution ventilation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	WHITE
Odor:	Mild, sweet
Odor Threshold:	Not established
Weight per Gallon:	9.1 lbs.
Specific Gravity:	1.09
% Solids by Weight:	55.3
pH:	4.3
Boiling Range:	Greater than 500 F (263 C)
Freezing/Melting Point:	Not established
Vapor Pressure:	Not established
Vapor Density:	Not established
Evaporation Rate:	Not established
Water/Oil Partition Coefficient:	Not established
VOC:	4 g VOC/liter of material (VOC theoretically determined using EPA Publication 450/3-84-019)
VOC, less water:	7 g VOC/liter of material, less water and exempt solvents (VOC theoretically determined using EPA Publication 450/3-84-019.)

MATERIAL SAFETY DATA SHEET

ELF ATOCHEM NORTH AMERICA
BASIC CHEMICALS
2000 MARKET ST.
PHILADELPHIA, PA 19103-3222

EMERGENCY PHONE NUMBERS
BUSINESS HRS.: 215-419-7695
BUSINESS HRS.: 215-419-7704
OTHER HOURS 800-424-9300
CHEMTREC: 800-424-9300

PRODUCT IDENTIFICATION

PRODUCT NAME: CAS NO.: N4-MIXTURE
CAUSTIC SODA 50% STANDARD GRADE
SYNONYMS:
SODIUM HYDROXIDE SOLUTION
CHEMICAL NAME:
SODIUM HYDROXIDE
MOLECULAR FORMULA:
NaOH
CHEMICAL FAMILY: ALKALI

INGREDIENTS---HAZARD CLASSIFICATIONS

COMPONENTS-HAZARDOUS: CAS NO.: % COMMENTS:

SODIUM HYDROXIDE 01310-73-2 50 TWA 2 MG/M3 (C)
NFPA RATING: 3-0-1

HAZARDOUS MATERIALS RATING (HMIS) -----> HEALTH = 3
FLAMMABILITY = 0
REACTIVITY = 1
PERSONAL PROTECTION = D

COMPONENTS-OTHER: CAS NO.: % COMMENTS:

WATER 7732-18-5 50

SHIPPING INFORMATION

TANK TRUCKS: RQ SODIUM HYDROXIDE SOLUTION; 8 CORROSIVE MATERIAL; UN 1824
PGII; CORROSIVE PLACARDS.

TANK CARS: RQ SODIUM HYDROXIDE SOLUTION; 8 CORROSIVE MATERIAL; UN 1824,
PGII; PLACARDED CORROSIVE.

DOT REPORTABLE QUANTITY (RQ) IS 1000 LBS ON DRY BASIS.

- NOT APPLICABLE. NE - NOT ESTABLISHED
(R) - INDICATES REGISTERED TRADEMARK OF ELF ATOCHEM NORTH AMERICA

SECTION V - HEALTH HAZARD DATA (cont.)

-FIRST AID:

Flush skin or eyes with water. If overexposure from inhalation is thought to occur, remove to fresh air. If ingested, call a physician.

SECTION VI - REACTIVITY DATA

STABILITY: [] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [] May occur [x] Will not occur
-INCOMPATIBILITY

NA

-CONDITIONS TO AVOID:

None known to exist.

-HAZARDOUS DECOMPOSITION PRODUCTS:

None known to exist.

SECTION VII - SPILL OR LEAK PROCEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush small quantities with excess water. Larger amounts should be absorbed onto appropriate material, (e.g. sawdust).

-WASTE DISPOSAL METHOD:

Dispose of in accordance with Local, State and Federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

None usually required.

-VENTILATION:

General mechanical ventilation is recommended.

-PROTECTIVE GLOVES:

Impervious gloves are recommended.

-EYE PROTECTION:

Safety glasses are recommended.

-OTHER PROTECTIVE EQUIPMENT:

None usually required.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Keep from freezing. Keep container closed when not in use.

-OTHER PRECAUTIONS:

Common sense and good manufacturing practice should be used at all times.

(NA= Not Applicable NE= Not Established N/AV= Not Available)

This MSDS complies with OSHA's Hazard Communication Standard
29 CFR 1910.1200.

SECTION IX - SPECIAL PRECAUTIONS (cont.)

-OTHER PRECAUTIONS: (cont.)

State Right To Know Information:

Components listed below are among the top 5 components or are present at or above reporting thresholds. All components not identified are nonhazardous and/or are below reporting thresholds. The formulation is a trade secret.

SECTION X - ADDITIONAL REGULATORY INFORMATION

-SARA TITLE III SECTION 313:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right To Know Act of 1986 and of 40 CFR 372:

CAS#	Chemical Name	Percent by Weight
-----	-----	-----
	None	

-PROP 65 (CARCINOGEN):

WARNING: This product contains a chemical known to the state of California to cause cancer.

CAS#	Chemical Name
-----	-----
	None

-PROP 65 (TERATOGEN)

WARNING: This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

CAS#	Chemical Name
-----	-----
	None

Page: 4

MICHELMAN, INC

Material Safety Data Sheet for: Michem Coat 40H AF(MC40HAF)

SECTION X - ADDITIONAL REGULATORY INFORMATION (cont.)

-PROP 65 (BOTH CARCINOGEN AND TERATOGEN)

WARNING: This product may contain a chemical known to the state of California to cause cancer or birth defects or other reproductive harm

CAS#

Chemical Name

None

E E

MATERIAL SAFETY DATA SHEET

H. B. FULLER COMPANY
1200 WOLTERS BOULEVARD
VADNAIS HEIGHTS, MINNESOTA 55110

DATE: 25 JUNE 1991

PREPARED BY: INDUSTRIAL HYGIENE
TELEPHONE NUMBER: 612/481-3300

EMERGENCY MEDICAL TELEPHONE NUMBER: 800/228-5635

PRODUCT IDENTIFICATION

H. B. FULLER COMPANY NAME: WB-4722

TRADENAME: FULL-GRIP COATING

PRODUCT CLASS: OXIDE BASED PRODUCT IN WATER

DOT PROPER SHIPPING NAME: NOT REGULATED

WARNING STATEMENTS

NO SPECIFIC WARNINGS FOR NORMAL USE CONDITIONS.

PRECAUTIONARY MEASURES

AVOID TEMPERATURE EXTREMES IN STORAGE.

HMS RATING

HEALTH-1

FLAMMABILITY-0

REACTIVITY-0

EMERGENCY AND FIRST AID PROCEDURES

FIRST AID:

IF IN EYE:

FLUSH IMMEDIATELY WITH WATER FOR 15 MINUTES.
CONSULT A PHYSICIAN IF IRRITATION PERSISTS.

IF ON SKIN:

WASH AFFECTED AREA WITH SOAP AND WATER. LAUNDRY
CONTAMINATED CLOTHING BEFORE REUSE.

IF VAPORS INHALED:

REMOVE SUBJECT TO FRESH AIR.

IN CASE OF FIRE:

THIS PRODUCT IS NON-FLAMMABLE IN THE LIQUID STATE.
USE WATER SPRAY, FOAM, DRY CHEMICAL OR CARBON
DIOXIDE ON DRIED PRODUCT.

SPILL OR LEAK:

CONTAIN AND REMOVE WITH INERT ABSORBENT. KEEP SPILL
OUT OF SEWERS.

NA - NOT APPLICABLE
NE - NOT ESTABLISHED

HAZARDOUS INGREDIENTS

MATERIAL NAME/CAS #	LEVEL IN PRODUCT	OSHA PEL	ACGIH TLV (1990-1991)
---------------------	---------------------	----------	--------------------------

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCE(S) IDENTIFIED BY OSHA OR THE ACGIH AS HAZARDOUS. DURING NORMAL USE THE MATERIAL WILL NOT PRESENT AN EXPOSURE RISK. ONCE THE PRODUCT HAS REACHED ITS FINAL STATE AND IS ABRADED OR DISTURBED, DUSTING AND EXPOSURE MAY OCCUR.

SILICA-AMORPHOUS (112945-52-5)	> 10%	6 MG/M3	* 10 MG/M3
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* THIS TLV REFERS TO THE ACGIH LISTING FOR PNC (PARTICULATES NOT OTHERWISE CLASSIFIED)

THIS MSDS IS PREPARED TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200). UNLISTED INGREDIENTS ARE NOT 'HAZARDOUS' PER THIS OSHA STANDARD AND ARE CONSIDERED TO BE TRADE SECRETS OF THE H. B. FULLER COMPANY. IDENTITIES OF TRADE SECRET INGREDIENTS WILL BE MADE AVAILABLE FOLLOWING THE PROCEDURES SPECIFIED IN THE STANDARD.

OCCUPATIONAL CONTROL PROCEDURES

EYE PROTECTION:	WEAR SAFETY GLASSES TO REDUCE THE POTENTIAL FOR EYE CONTACT; CHEMICAL SAFETY GOGGLES ARE APPROPRIATE IF SPLASHING IS LIKELY. HAVE EYE WASHES AVAILABLE WHERE EYE CONTACT CAN OCCUR.
-----------------	---

SKIN PROTECTION:	PREVENT PROLONGED OR REPEATED CONTACT BY USING RUBBER GLOVES AND APPROPRIATE PROTECTIVE CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE.
------------------	---

RESPIRATORY PROTECTION:	NOT NORMALLY REQUIRED. USE NIOSH/MSHA APPROVED RESPIRATOR IF CONDITIONS WARRANT.
-------------------------	--

VENTILATION:	STANDARD INDUSTRIAL VENTILATION.
--------------	----------------------------------

FIRE PROTECTION

FLASH POINT/METHOD:	NON-FLAMMABLE
---------------------	---------------

APPROPRIATE EXTINGUISHERS:	NON-FLAMMABLE IN LIQUID STATE; USE WATER SPRAY, FOAM, DRY CHEMICAL OR CARBON DIOXIDE ON DRIED PRODUCT.
----------------------------	--

SPECIAL FIRE FIGHTING PROCEDURES:	PERSONS EXPOSED TO PRODUCTS OF COMBUSTION SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE EQUIPMENT.
-----------------------------------	---

UNUSUAL FIRE AND EXPLOSION HAZARDS:	THERE IS THE POSSIBILITY OF PRESSURE BUILDUP IN CLOSED CONTAINERS WHEN HEATED. WATER SPRAY MAY BE USED TO COOL THE CONTAINERS.
-------------------------------------	--

REACTIVITY DATA

STABILITY:	STABLE
------------	--------

INCOMPATIBILITY:	NOT ESTABLISHED
------------------	-----------------

HAZARDOUS DECOMPOSITION PRODUCTS:	INCOMPLETE COMBUSTION CAN YIELD LOW MOLECULAR WEIGHT HYDROCARBONS, CARBON MONOXIDE
-----------------------------------	--

HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR.
---------------------------	-----------------

NA - NOT APPLICABLE
NE - NOT ESTABLISHED

EFFECTS OF OVEREXPOSURE

EYES: DIRECT EYE CONTACT WITH THE PRODUCT MAY CAUSE IRRITATION.

SKIN: PROLONGED OR REPEATED CONTACT WITH LIQUID PRODUCT MAY CAUSE IRRITATION.

INHALATION: NO EXPECTED EFFECTS.

CHRONIC: NO ANTICIPATED CHRONIC EFFECTS.
THIS PRODUCT DOES NOT CONTAIN REGULATED LEVELS OF NTP, IARC, OR OSHA LISTED CARCINOGENS.

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE:
NO KNOWN EFFECTS ON OTHER ILLNESSES.

PHYSICAL DATA

PHYSICAL STATE: LIQUID

WEIGHT PER GALLON: 9.4 LBS.

VISCOSITY: 80 CPS

% SOLIDS BY WEIGHT: 20

PH: 9.6 TO 10.0

BOILING RANGE: GREATER THAN 200 F

SOLUBLE IN WATER: MISCIBLE

SPILL, LEAK & DISPOSAL INFORMATION

SPILL OR LEAK PROCEDURES: DIKE IF NECESSARY, CONTAIN SPILL WITH INERT ABSORBENT AND TRANSFER TO CONTAINERS FOR DISPOSAL. KEEP SPILLED PRODUCT OUT OF SEWERS, WATERSHEDS OR WATER SYSTEMS.

WASTE DISPOSAL: TO THE BEST OF OUR KNOWLEDGE, THIS PRODUCT DOES NOT MEET THE DEFINITION OF HAZARDOUS WASTE UNDER THE U.S. EPA HAZARDOUS WASTE REGULATIONS 40 CFR 261. IT DOES NOT CONTAIN ANY ADDED RAW MATERIALS WITH KNOWN LEVELS OF TCLP CONSTITUENTS AS IDENTIFIED IN SECTION 261.24 OF THE U.S. EPA HAZARDOUS WASTE REGULATION. LEACHATE TESTS HAVE NOT BEEN PERFORMED. STATE OR LOCAL HAZARDOUS WASTE REGULATIONS MAY APPLY IF THEY ARE DIFFERENT FROM THE FEDERAL REGULATION. SOLIDIFY AND DISPOSE OF IN AN APPROVED LANDFILL. FOR ADDITIONAL WASTE DISPOSAL ASSISTANCE, CONSULT H.B. FULLER ENVIRONMENTAL SERVICES AT 612/481-1588.

STORAGE

PROTECT FROM FREEZING - PRODUCT STABILITY MAY BE AFFECTED.

REGULATORY INFORMATION

TSCA

ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCES CONTROL ACT.

NA - NOT APPLICABLE
NE - NOT ESTABLISHED

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SARA TITLE III

SECTION 313: THIS PRODUCT DOES NOT CONTAIN REGULATED LEVELS OF ANY TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) AND 40 CFR PART 372.

NA - NOT APPLICABLE
NE - NOT ESTABLISHED



MICHELMAN, INC.

9080 SHELL ROAD, CINCINNATI, OHIO 45236-1299 USA

Telephone: 513-793-7766 Fax: 513-793-2504

USER'S RESPONSIBILITY

The information provided in the attached Material Safety Data Sheet pertains to the product as shipped by Michelman, Inc.

The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

Distribution Worldwide

LFC001024



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MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

H.B. Fuller Company
1200 Walters Boulevard
Vadnais Heights, MN 55110
Phone: 612-481-3300
Fax: 612-481-3309

MSDS INFORMATION

Preparation Date: 08/02/94
Supersedes: 08/02/94
Prepared By: Industrial Hygiene
Phone Number: 612-481-3300

Medical Emergency Phone Number: 1-800-228-5635 ext 018
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

Product Name/Number: WB-2523 675
Trade Name: FULLREZ STARCH ADDITIVE
Product Description (product use): Water based adhesive

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS). Unlisted ingredients are not 'hazardous' per the OSHA standard and/or are not found on the WHMIS ingredient disclosure list.

Chemical/CAS Number	Percent	OSHA PEL	ACGIH TLV
Formaldehyde (50-00-0)	0.15	0.75 ppm	0.3 ppm-C
LD50: 100 mg/kg (oral, rat)	LC50: 203 mg/M3 (rat)		
Vapor pressure, in mm Hg @ 20 C: 400			
OSHA STEL: 2 ppm			

"C" denotes a ceiling limit that should not be exceeded during any part of the working exposure.

See Section 16 for additional information.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Possible cancer hazard. Contains a material which may cause cancer.

POTENTIAL HEALTH EFFECTS

Eyes: Eye contact with liquid product may cause irritation.

Skin: Prolonged or repeated contact with liquid product may cause irritation.

Formaldehyde is a potential skin sensitizer.

Inhalation: Exposure to vapors in poorly ventilated areas may cause irritation of the nose, throat and respiratory tract. Formaldehyde is a potential respiratory sensitizer.

Ingestion: Not an anticipated route of exposure. Small amounts are not anticipated to be harmful.

Chronic: No anticipated chronic effects.

REGULATED CARCINOGEN STATUS:

Formaldehyde is listed as a potential carcinogen by NTP and IARC.

Existing Health Conditions Affected by Exposure: No known effects on other illnesses.

SECTION 4: FIRST AID MEASURES

If in eye: Flush immediately with water for 15 minutes. Consult a physician if irritation persists.

If on skin: Wash affected area with soap and water. Launder contaminated clothing before reuse.

If vapors inhaled: Remove subject to fresh air.

If ingested: If person can swallow, give one glass of water or milk. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point/Method: Non-flammable

Upper Explosive Limit/Lower Explosive Limit: Not applicable

Autoignition Temperature: Not applicable

Appropriate Extinguishers: Non-flammable in liquid state; use water spray, foam, dry chemical or carbon dioxide on dried product.

Special Fire Fighting Procedures: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

Unusual Fire and Explosion Hazards: There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

Hazardous Combustion Product: Incomplete combustion can yield low molecular weight hydrocarbons, carbon monoxide, nitrogen compounds

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds or water systems.

SECTION 7: HANDLING AND STORAGE

HANDLING INFORMATION

Wear appropriate protective equipment when working with this product.

STORAGE INFORMATION

Avoid temperature extremes in storage.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing is likely. Have eye washes available where eye contact can occur.

Skin Protection: Prevent prolonged or repeated contact by using rubber gloves and appropriate protective clothing. Launder contaminated clothing before reuse.

Respiratory Protection: Not normally required. Use NIOSH/MSHA approved ammonia vapor respirator if conditions warrant.

Ventilation: General dilution ventilation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	DARK RED
Odor:	Mild, sweet
Odor Threshold:	Not established
Weight per Gallon:	9.9 lbs.
Specific Gravity:	1.19
% Solids by Weight:	47
pH:	7.5
Boiling Range:	Greater than 133 F (56 C)
Freezing/Melting Point:	Not established
Vapor Pressure:	Not established
Vapor Density:	Not established
Evaporation Rate:	Not established
Water/Oil Partition Coefficient:	Not established

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable

Incompatibility: Not established

Hazardous Decomposition:
Nitrogen compounds

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

No data available

SECTION 12: ECOLOGICAL INFORMATION

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORTATION INFORMATION

UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT)

DOT Proper Shipping Name: NOT REGULATED

It is our opinion that the information provided here may be used to transport this product in compliance with Canadian Transportation of Dangerous Goods.

SECTION 15: REGULATORY INFORMATION

FEDERAL

Toxic Substances Control Act (TSCA)

Section 8(b) - Inventory Status

All components of this product are registered under the regulations of the Toxic Substances Control Act.

SARA TITLE III

Section 313: This product contains the following toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372:

Chemical Name	CAS Number	Percent
Formaldehyde	50-00-0	0.15

STATE REGULATIONS

California Proposition 65: Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

This product contains chemical(s) known to the state of California to cause cancer or reproductive damage.

0.0005% Benzene 71-43-2

listed February 27, 1987

0.15 Formaldehyde 50-00-0

listed January 1, 1988

WHMIS IDENTIFICATION/OTHER INTERNATIONAL REGULATIONS

D2A

SECTION 16: ADDITIONAL INFORMATION

HMIS RATING

Health-1 Flammability-0 Reactivity-0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to the H.B. Fuller Company from its suppliers, and because the H.B. Fuller Company has no control over the conditions of handling and use, the H.B. Fuller Company makes no warranty, express or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and the H.B. Fuller Company assumes no responsibility from use or reliance thereon. It is the responsibility of the user of H.B. Fuller Company products to comply with all applicable federal, state and local laws and regulations.

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: MICHELMAN, INC
9080 SHELL ROAD
CINCINNATI OH 45236

Information Phone: (513) 793-7766
Emergency Phone: (513) 793-7766
CHEMTREC Phone: 1-800-424-9300

Product Class: Paper Coating
Trade Name : Michem Coat 40H AF
Product Code : MC40HAF
C.A.S. Number: None

Hazard Ratings: Health - 1
! none -> extreme Fire - 0
! 0 ---> 4 Reactivity - 0
! Personal Protection - B

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits	VP
			ACGIH/TLV OSHA/PEL	mm HG

*** ALL Ingredients in this product are listed in the T.S.C.A. Inventory.
(No hazardous ingredients known at this time.)

Product is not a hazardous chemical as defined by OSHA
Standard 29 CFR 1910.1200.
Not a controlled product as defined by Part IV of the
Controlled Products Regulations.

SECTION III - PHYSICAL DATA

Boiling Range: = Water
Evap. Rate: Slower than n-Butyl Acetate
Volatiles vol % 65 Wgt% 0.0

Vapor Density: Lighter than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 8.50 Pounds.
Spec. Gravity: 1.02041

Appearance: White liquid.
V.O.C.: NE

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: NA Flash Point: None F LEL: NA UEL: NA
-EXTINGUISHING MEDIA:
NA
-SPECIAL FIREFIGHTING PROCEDURES:
NA
-UNUSUAL FIRE & EXPLOSION HAZARDS:
NA

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:
See Section II
-EFFECTS OF OVEREXPOSURE:
Health Hazards (Acute and Chronic): None known to occur.
Carcinogenicity: None known to exist.
Signs and Symptoms of Exposure: None known to occur.
Medical Conditions Generally Aggravated by Exposure: None
known to occur.